

SELF-VIEWS AND BEHAVIORS

An Undergraduate Research Scholars Thesis

by

ANNA BEATRIX GOULD

Submitted to the Undergraduate Research Scholars program at
Texas A&M University
in partial fulfillment of the requirements for the designation as an

UNDERGRADUATE RESEARCH SCHOLAR

Approved by Research Advisor:

Dr. M. Brent Donnellan

May 2017

Major: Psychology

TABLE OF CONTENTS

	Page
ABSTRACT.....	1
CHAPTER	
I. INTRODUCTION	2
II. METHODS	5
Participants	5
Procedure	5
Measures	6
III. RESULTS	11
Global versus External Self-Esteem	11
Global versus External Contingencies of Self-Esteem	12
External versus Internal Contingencies	13
Body Esteem versus Global Self-Esteem	14
Organizational Perfectionism and BFRB Severity	15
Narcissism and BFRB Severity	16
Other Measures	17
IV. DISCUSSION.....	18
REFERENCES	22
APPENDIX	24

ABSTRACT

Self-Views and Behaviors

Anna B. Gould
Department of Psychology
Texas A&M University

Research Advisor: Dr. M. Brent Donnellan
Department of Psychology
Texas A&M University

Body-Focused Repetitive Behaviors (BFRB) are significantly underrepresented in psychology research, and little is known on their characteristics and relationship to self-esteem, despite the serious impairments they cause many individuals. Two hundred and ninety-five undergraduate students ($M=18.61$ years, $SD=0.78$) completed an online survey composed of measures related to BFRB presence and severity, personality, perfectionism, emotion regulation, emotional reactivity, narcissism, and global and contingent self-esteem. There were no consistent patterns of association between BFRB severity and contingencies of self-esteem. However, BFRB disorder severities were associated consistently with measures of global self-esteem, vulnerable narcissism, emotion regulation, emotional reactivity, and body dysmorphia. These findings suggest that attention to adaptive and maladaptive contingencies of self-esteem for treating BFRBs might be questionable. Instead, attention to maladaptive global self-views and other constructs might be more useful. Moreover an individual approach must be taken in clinical practice when considering the effects of contingencies on a person's disorder severity.

CHAPTER I

INTRODUCTION

Body-Focused Repetitive Behaviors (BFRBs), sometimes referred to as OCD-spectrum disorders, are impulse control disorders characterized by repetitive behaviors directed towards the body, often causing significant impairment and distress. The most commonly studied disorders include Trichotillomania (TTM), Pathological Skin Picking (PSP), and Nail Biting (NB). Consequences of these disorders include damage to one's physical appearance, lowered self-evaluations, and negative evaluation by others (Hansen, Tishelman, Hawkins, Doepke, 1990). Although literature on BFRBs and self-esteem is limited, it has been reported that individuals with high self-esteem and BFRBs are less likely to experience significant distress from their behaviors (Joubert, 1993). These findings indicate a link between BFRBs and their harmful effects on an individual's self-esteem.

While global self-esteem reflects overall feelings of the self, body esteem is specifically focused on the body and one's body image, and is therefore especially appropriate to examine in disorders demarcated by their hyperfocus towards the body. Research examining the relationship between body esteem and hair pulling revealed that lower levels of body esteem in regards to appearance were associated with increased hair pulling severity and distress (Altenburger, Tung, & Keuthen 2014). In general, there is a level of physical inspection involved in the symptomatology of many with BFRBs. Individuals with TTM may stare into the mirror for hours, picking out specific hairs to pull based on their look and/or feel, and may look at and roll individual hairs between their fingers after pulling them. Skin picking is commonly linked with

the construct of body dysmorphia, and is frequently comorbid with Body Dysmorphic Disorder (Grant, Menard, & Phillips, 2006). Individuals with PSP often pick skin based on a perceived roughness, bumpiness, or coloration to particular skin areas. Thus, how appearance affects one's self esteem as well as one's body esteem are important to research and discuss when considering the theoretical make-up of these complex disorders, as well as their treatment.

Self-esteem, while often viewed as a singular, overarching construct, can be broken down into various factors, known as contingencies. Contingencies of self-esteem are the conditions that individuals place upon themselves in order to perceive themselves as "worthy". These attributions can be anything from academic success to appearance. The literature has demonstrated that making self-esteem contingent on external factors like physical appearance over internal factors like virtue have more negative consequences and is therefore maladaptive (Crocker & Knight, 2005). Maladaptive contingencies of self-esteem have been linked with the construct of perfectionism, a concept associated with BFRBs.

BFRBs are associated with organizational perfection and difficulties in regulating emotion related to the frustrated action model. Within the frustrated action model, individuals with BFRBs have a maladaptive planning style called organizational perfectionism, where they aim to be highly productive to increasingly high standards, while being unable to relax (Roberts, O'Connor, Aardema, & Belanger, 2015). Due to this planning style, they are especially prone to boredom, frustration, and dissatisfaction, which they regulate through BFRBs to relieve tension.

In the current study, we hope to expand the limited existing research on self-esteem, body esteem, and BFRBs to explore whether a heightened emphasis on one's body esteem impacts the severity of BFRBs in individuals. In addition, we will examine whether body esteem or global self-esteem is more predictive of BFRB severity. Finally, we will investigate whether a common set of maladaptive contingencies of self-esteem exist for individuals with BFRBs.

Therefore, I predict that external self-esteem will be more predictive of BFRB severity than internal self-esteem. In addition, body esteem will be more strongly correlated with severity of BFRBs than global self-esteem. I also predict that the greater the severity of a person's BFRBs, the higher their scores on maladaptive, external contingencies, such as academics, appearance, competition, others' approval, and school. Finally, there will be a strong, positive correlation between Organizational Perfectionism and BFRB severity scores. Narcissism, particularly vulnerable narcissism, will be examined on an exploratory basis, as it is often thought to involve disruptions in self-esteem and feelings of self-worth. The results of this study will better characterize these disorders to researchers, clinicians, and the individuals who struggle with them.

CHAPTER II

METHODS

Participants

For the study, 295 undergraduate students ($M_{age}=18.61$ years, $SD_{age}=0.78$) completed measures. Participants were drawn from the Department of Psychology at Texas A&M subject pool. Students earned course credit by participating in experiments.

There were no exclusions, and inclusion was based on enrollment in the subject pool. Of the 295 students, 69 students reported their sex as male, and 226 students reported their sex as female. For gender, 69 students identified as male, 226 students as female. The sample contained participants who identified as White or Caucasian (73.22%, $n=216$), Black or African American (3.73%, $n=11$), Asian (8.47%, $n=25$), Hispanic, Latino/a, Latinx, or of Spanish origin (20.00%, $n=59$), Middle Eastern or North African (1.36%, $n=4$), Native Hawaiian or Other Pacific Islander (0.68%, $n=2$), and Other Indigenous Identity (0.34%, $n=1$). No participants identified as American Indian, Native American, or Alaska Native.

Procedure

The study was an online correlational survey through Qualtrics, which consists of a series of established and validated questionnaires related to the psychological constructs of perfectionism, narcissism, self-esteem, personality, emotion regulation, and emotional reactivity, as well as symptoms of Body-Focused Repetitive Behaviors. Participants were recruited through the SONA system, through the Department of Psychology subject pool. The system linked to the

questionnaire hosted through Qualtrics. After reading an information sheet describing the study as well as contact information, the participants took the questionnaire on their own computers. Participants were free to skip questions, and received two credits for their participation in the study. The study was approved by the Texas A&M Institutional Review Board.

The study was not timed and they could take as long as they needed. Participants could also exit the survey at any time, or not answer any question. Identifiers were not collected on participants, as the software has the capability of awarding credit automatically. Data were downloaded into a SPSS file on password protected computers that only the investigators had access to, where the data was scored, and is being analyzed using correlational analyses.

Measures

For the survey, measures were included to assess global self-esteem, contingencies of self-esteem, BFRB severity, body dysmorphia, perfectionism, emotion regulation, emotional reactivity, narcissism, and personality dysfunction. Also, an information sheet, demographics form, and debriefing form were included. A table with means, standard deviations, and estimates of internal consistency is included in the Appendix.

Global Self-Esteem

The Rosenberg Self-Esteem Scale (*RSE*; Rosenberg, 1965) and State Self-Esteem Scale (Heatherton & Polivy, 1991) were used to assess global self-esteem. The RSE has 10 items, and responses were made on a 5-point scale, measured from (1=Strongly Disagree to 5=Strongly Agree). Sample items include “I feel that I have a number of good qualities” and “I feel that I’m a

person of worth, at least on an equal plane with others”. The SSE has 20 items, and responses were made on a 5-point scale (1=not at all to 5=extremely). Sample items include “I feel satisfied with the way my body looks right now” and “I feel good about myself”.

Contingencies of Self-Esteem

Contingencies of Self-Esteem were measured using the 35-item Contingencies of Self Worth Scale (*CSW*; Crocker, Luhtanen, Cooper, et al., 2003). Items on this scale are measured on a 7-point scale (1=strongly disagree, 7=strongly agree). Sample items include “When my family members are proud of me, my sense of self-worth increases” and “My self-esteem is influenced by how attractive I think my face or facial features are”.

BFRB Severity

The presence and severity of BFRBs in participants were measured using the Massachusetts General Hospital Hairpulling Scale (*MGH-HS*; Keuthen et al., 1995), Skin Picking Scale – Revised (*SPS-R*; Snorrason et al., 2012), and adapted versions of the Massachusetts General Hospital Scale for Cheek Biting, Skin Biting, Nail Biting, Teeth Grinding, and other BFRBs. The MGH-HS and adapted scales each have 7 items, except for the other BFRBs scale, which has an additional item asking what the other behavior is. These scales are measured on a 5-point scale from (0=no symptoms to 4=severe symptoms). Sample items from the MGH-HS are “On an average day, how often did you feel the urge to pull your hair?” and “On an average day, how often did you actually pull your hair?”. The adapted scales simply replace mentions of “hairpulling” with another BFRB, such as “teeth grinding”. The SPS-R is a 8-item scale, measured on a 5-point scale from (0=none to 4=extreme). Sample items include

“How often do you feel the urge to pick your skin?” and “How much emotional distress (anxiety/worry, frustration, depression, hopelessness, or feelings of low self-esteem) do you experience from your skin picking?”.

Body Dysmorphia

Body dysmorphia was measured using the 10-item Appearance Anxiety Inventory (AAI, Veale et al., 2014), measured on a 5-point scale from (0=not at all to 4=all the time). Sample items include “I check my appearance (e.g. in mirrors, by touching with my fingers, or by taking photos of myself)” and “I try to camouflage or alter aspects of my appearance”.

Perfectionism

Perfectionism was measured using the Perfectionism Inventory (PI, Hill et al., 2004). The PI is a 59-item scale, and responses are measured on a 5-point scale from (1=strongly disagree to 5=strongly agree). Sample items include “My work needs to be perfect, in order for me to be satisfied” and “I drive myself rigorously to achieve high standards”.

Emotion Regulation

Emotion Regulation was measured using the following two scales: Difficulties in Emotion Regulation Scale (DERS, Gratz & Roemer, 2004), and Emotion Regulation Questionnaire (ERQ; Gross & John, 2003). The DERS is a 36-item scale, and responses are measured on a 5-point scale from (1=almost never to 5=almost always). Sample items include “I experience my emotions as overwhelming and out of control” and “I am confused about how I feel”. The ERQ is a 10-item scale measured on a 7-point scale from (1=strongly disagree to

7=strongly agree). Sample items include “When I want to feel less negative emotion (such as sadness or anger), I *change what I’m thinking about*” and “When I’m faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.”. Results for the Emotion Regulation measure are reported in the Appendix.

Emotional Reactivity

Emotional reactivity was measured using the 21-item Emotional Reactivity Scale (*ERS*; Nock, Wedig, Holmberg, & Hooley, 2008). This scale is measured on a 5-point scale from (0=not at all like me to 4=completely like me), and sample items include “I experience emotions very strongly” and “I am easily agitated”. Results for the Emotional Reactivity measure are reported in the Appendix.

Narcissism

Narcissism was measured using the 28-item Brief Pathological Narcissism Inventory (*B-PNI*, Schoenleber et al., 2015). This measure uses a 6-point scale from (0=not at all like me to 5=very much like me), and sample items include “I often fantasize about accomplishing things that are probably beyond my means” and “It’s hard to show others the weaknesses I feel inside”.

Personality

Personality and personality dysfunction were assessed using the Adult Personality Inventory for DSM-5-Brief Form (*PID-5-BF*; Krueger et al., 2013). This measure has 25 items, measured on a 4-point scale from (0=very false or often false to 3=very true or often true).

Sample items include “I feel like I act totally on impulse” and “I get emotional easily, often for very little reason”. Results for the personality measure are reported in the Appendix.

CHAPTER III

RESULTS

Global versus External Self-Esteem

Table 1. Correlations between Global and External Self-Esteem and BFRB Severity Measures.

	Hair Pulling	Skin Picking	Cheek Biting	Skin Biting	Nail Biting	Teeth Grinding	Other
Rosenberg Self Esteem	-.167**	-.164**	-.177**	-.076	-.078	-.057	-.116*
State Self Esteem	-.180**	-.116*	-.130*	-.055	-.129*	-.058	-.136*
Performance	-.186**	-.104	-.139*	-.053	-.111	-.065	-.110
Social	-.173**	-.109	-.085	-.059	-.128*	-.078	-.126*
Appearance	-.113	-.093	-.127*	-.030	-.100	-.005	-.124*

Note: ** $p < .01$, * $p < .05$

Table 1 displays the correlations between BFRB severity scales and measure of self-esteem for both global and state, or external, esteem. For example, global self-esteem was negatively associated with cheek biting ($r = -.18, p < .05$) and the overall state self-esteem score was negatively associated with hair pulling ($r = -.18, p < .05$). Counter to the hypothesis, the patterns of associations for global and state self-esteem appeared similar. One consideration, however, was that measures of state self-esteem and global self-esteem were strongly correlated. For example, the correlation between global self-esteem and the overall composite for state self-esteem was $.79 (p < .05)$. Thus, it might not be surprising that the two measures had a similar pattern of association with BFRB measures.

Differences between the correlations were formally tested using an online calculator. Given that the three subscales for state self-esteem were strongly correlated and had similar patterns of association with BFRB severity scales, I focused on simply comparing global self-

esteem with the state self-esteem composite. None of the comparisons were statistically significant (the largest t value was |1.351|). Moreover, the differences in the size of the correlations were trivial, as none were larger than .10.

Overall, global self-esteem and state self-esteem had generally small associations with hair pulling, skin picking, cheek biting, and other BFRBs. However, there was no compelling evidence that external scales were more predictive than global self-esteem, a form of internal self-esteem.

Global versus External Contingencies of Self-Esteem

Table 2: Correlations of Global and External Contingencies of Self Esteem with BFRB Severity.

	Hair Pulling	Skin Picking	Cheek Biting	Skin Biting	Nail Biting	Teeth Grinding	Other
Rosenberg Self Esteem	-.167**	-.164**	-.177**	-.076	-.078	-.057	-.116*
CSW: Academic	.028	.110	.051	.017	.030	-.019	.143*
CSW: Appearance	.094	.097	.162**	-.047	.091	.023	.167**
CSW: Competition	.081	.051	.067	-.037	-.005	.046	.059
CSW: Approval	.109	.126*	.112	.081	.095	.030	.169**

Note: ** $p < .01$, * $p < .05$

A further example of the lack of predictive power of internal scales over external scales of self-esteem can be found in the comparison of correlations between global self-esteem and the external contingencies of self-esteem from the Contingencies of Self Worth Scale (academics, appearance, competition, others' approval). These are reported in Table 2. Examples include the small positive correlation between the appearance contingency and cheek biting ($r = .16, p < .05$) as compared to the negative correlation between global self-esteem and cheek biting severity of

near equivalent value ($r = -.18, p < .05$). Although the academic contingency scale was more predictive of Hair Pulling and Cheek Biting severity than global self-esteem ($t = 1.84; p < .05; t = 1.67; p < .05$), this trend was not seen across the other BFRBs, and none of the other contingencies were more predictive than global self-esteem for any of the BFRBs. The highest t value outside of the previously mentioned significant values was $|1.37|$. Thus, whether the measure of external self-esteem was the State Self Esteem scale or subscales of the Contingencies of Self Worth scale, external self-esteem was not more predictive of BFRB severity than global self-esteem.

External versus Internal Contingencies

Table 3. Correlations of External and Internal Contingencies of Self-Esteem with BFRB Severity

	Hair Pulling	Skin Picking	Cheek Biting	Skin Biting	Nail Biting	Teeth Grinding	Other
Contingencies of Self Worth	.074	.125*	.136*	.001	.041	.018	.160**
<i>External Contingencies</i>							
Academic	.028	.110	.051	.017	.030	-.019	.143*
Appearance	.094	.097	.162**	-.047	.091	.023	.167**
Competition	.081	.051	.067	-.037	-.005	.046	.059
Others' Approval	.109	.126*	.112	.081	.095	.030	.169**
<i>Internal Contingencies</i>							
Virtue	-.023	.065	.028	-.017	-.064	-.012	.010
God's Love	-.025	.006	.018	-.161**	-.014	-.045	-.042
Family Support	-.032	.012	.081	-.003	-.003	-.010	.039

Note: ** $p < .01$, * $p < .05$

When comparing the internal contingencies of self-esteem (virtue, god's love, family support) to the external contingencies (academics, appearance, competition, others' approval) from the Contingencies of Self Worth scale, once more external scales do not hold more

predictive power. As shown in Table 3, the contingencies were not consistently correlated with BFRB severity, with Hair Pulling, Nail Biting, and Teeth Grinding, each having no significant correlations with the scale overall or with individual subscales. Across the BFRBs, external contingencies were not significantly more predictive of BFRB severity than the internal contingencies. However, appearance was more predictive of Cheek Biting severity than Virtue and God’s Love, both internal contingencies ($t= 1.75, p < .05$; $t= 1.84, p < .05$). Despite these instances, appearance was not significantly more predictive of Cheek Biting than the family support contingency, and appearance was not more predictive for any of the other BFRBs. This finding contradicts the hypothesis that external contingencies would be more predictive than internal contingencies of BFRB severity.

Body Esteem versus Global Self Esteem

Table 4. Correlations of Body Esteem and Global Self Esteem with BFRB Severity

	Hair Pulling	Skin Picking	Cheek Biting	Skin Biting	Nail Biting	Teeth Grinding	Other
Rosenberg Self Esteem	-.167**	-.164**	-.177**	-.076	-.078	-.057	-.116*
Appearance Anxiety Inventory	.201**	.214**	.201**	.022	.211**	.133*	.290**
CSW: Appearance	.094	.097	.162**	-.047	.091	.023	.167**

Note: ** $p < .01$, * $p < .05$

The Appearance Anxiety Inventory, a measure of body dysmorphia, was significantly correlated with severity scores for all BFRBs except for Skin Biting. Despite this association, it was also not significantly more predictive of BFRB severity than global self-esteem, as I had hypothesized. As demonstrated by Table 4, the largest difference in value of the correlations is 0.17, between the Rosenberg Self Esteem scale and the Appearance Anxiety Inventory and Other

BFRBs ($r = -.12, p < .05$; $r = .29; p < .05$). Therefore, while there is a positive and significant correlation between body dysmorphia and BFRB severity, body esteem is not more predictive of severity than global self-esteem.

Organizational Perfectionism and BFRB Severity

Table 5. Correlations between Perfectionism and BFRB Severity.

	Hair Pulling	Skin Picking	Cheek Biting	Skin Biting	Nail Biting	Teeth Grinding	Other
Perfectionism Inventory	.065	.111	.174**	-.043	.102	.063	.120*
Concern Over Mistakes	.151**	.186**	.168**	.036	.124*	.104	.163**
High Standards for Others	.091	.060	.058	-.070	.055	.039	.080
Need for Approval	.111	.141*	.172**	.041	.082	.110	.121*
Organization	-.146*	-.093	.001	-.072	-.111	-.027	-.085
Perceived Parental Pressure	.028	.046	.097	-.026	.152**	-.044	.112
Planfulness	-.054	.025	.099	-.026	.005	-.024	-.033
Rumination	.115*	.125*	.224**	-.018	.115*	.122*	.153**
Striving for Excellence	.033	.099	.119*	-.112	.109	.055	.114
<i>Conscientious Perfectionism</i>	-.023	.032	.094	-.096	.021	.016	.028
<i>Self-Evaluative Perfectionism</i>	.122*	.150**	.199**	.010	.144*	.087	.167**

Note: ** $p < .01$, * $p < .05$

As shown in Table 5, Organizational Perfectionism was only significantly correlated with Hair Pulling ($r = -.146, p < .05$), contrary to the literature and my hypothesis. However, Rumination and Concern Over Mistakes, as well as the composite scale of Self-Evaluative Perfectionism, were significantly correlated with all BFRBs except Skin Biting (which did not significantly correlate with any measure throughout the survey), and Teeth Grinding (except for

Rumination, which still correlated significantly ($r = .12$). These results challenge existing literature regarding the frustrated action model, organizational perfectionism, and BFRBs.

Narcissism and BFRB Severity

Table 6. Correlations between Narcissism and BFRB Severity.

	Hair Pulling	Skin Picking	Cheek Biting	Skin Biting	Nail Biting	Teeth Grinding	Other
Brief Pathological Narcissism Inventory	.154**	.146*	.191**	.039	.140*	.241**	.174**
<i>Grandiosity</i>							
Exploitativeness	-.002	-.041	.060	.020	-.022	.142*	.001
Self-Sacrificing Self Enhancement	.058	.061	.155**	-.023	.051	.119*	.122*
Grandiose Fantasy	.094	.094	.104	.087	.033	.186**	.075
<i>Vulnerability</i>							
Contingent Self Esteem	.178**	.203**	.155**	.061	.164**	.180**	.207**
Hiding the Self	.160**	.141*	.103	.042	.123*	.172**	.175**
Devaluing	.170**	.159**	.232**	.007	.200**	.215**	.155**
Entitlement Rage	.126*	.125*	.189**	-.004	.184**	.214**	.153**

Note: ** $p < .01$, * $p < .05$

The facets of vulnerable narcissism were significantly correlated with BFRB severity, including the Contingent Self Esteem subscale, as evidenced by Table 6. The only exceptions were Skin Biting, which as previously mentioned did not correlate significantly with any measure, and Hiding the Self with Cheek Biting ($r = .10$, $p = n.s.$). In addition, Teeth Grinding was also significantly correlated with Grandiose narcissism, distinct from the other BFRBs, which did not. Cheek Biting severity significantly correlated with only one of the Grandiose narcissism facets, Self-Sacrificing Self Enhancement ($r = .16$, $p < .05$). These results present

evidence that there is a susceptibility to vulnerable narcissism over grandiose narcissism across most BFRBs.

Other Measures

Results from the Difficulties in Emotion Regulation scale (DERS) showed that emotion regulation was significantly correlated with disorder severity across BFRBs, with the exception of Skin Biting and the subscale “Lack of Emotional Awareness”. However, results from the Emotion Regulation Questionnaire (ERQ) did not demonstrate a significant association between BFRB severity and emotion regulation. Emotion Reactivity was significantly correlated with BFRB severity, across all subscales. Overall, BFRB severity was significantly associated with personality dysfunction. Psychoticism, Negative Affect, and Antagonism in particular were significantly associated with disorder severity across BFRBs. However, Disinhibition and Dettachment were only significantly associated were TTM, Teeth Grinding, and Nail Biting. Tables for these measures are available in the Appendix.

CHAPTER IV

DISCUSSION

The results of this study help illustrate the relationship between self-esteem and symptom severity for BFRBs. While global self-esteem significantly correlated with BFRB severity, the same was not true for self-esteem contingencies. Despite a rising interest in contingencies of self-esteem within psychological research concerning clinical disorders, there were no consistent patterns between specific contingencies or groups of contingencies and BFRBs. Moreover, no measure was shown to be a greater predictor of BFRB severity than global self-esteem. Furthermore, some individual disorders within the larger classification of ‘BFRBs’ varied significantly from the rest of the group across measures.

The results did not provide strong support for my original hypotheses. External self-esteem was not more predictive of BFRB severity than internal self-esteem. Body esteem did not correlate more strongly with BFRB severity than global self-esteem. In addition, individuals with higher BFRB severity scores did not correlate strongly or significantly with maladaptive external contingencies in a consistent or pattern-like manner. Finally, while BFRB severity scores did correlate significantly with many facets of perfectionism, Organizational Perfectionism was not one of them, except in the case of TTM. Despite finding some results counter to predictions, the current study helps to better characterize BFRBs for those who struggle with them and the clinicians who treat them for many reasons.

First, the results of this study demonstrate that while self-esteem does significantly impact the severity of these disorders, any work involving contingencies should be conducted on an individual basis, tailored to the specific client. Contingencies of self-esteem were not consistently related to BFRBs, suggesting that specific contingencies are not characteristic of each BFRB or across the classification. These results contradict current research theories and trends that emphasize the value and importance of contingencies as overarching and characteristic of entire disorder classes, akin to diagnostic criteria.

Second, the results of this study provide further evidence that BFRBs are diverse and distinct from one another within their classification as a group, and vary widely in their clinical characteristics. For example, the severity measure for Skin Biting did not correlate significantly with any measure throughout the study. This lack of significant correlations can be attributed to many causes. The measure, which was effective for the other BFRBs, may be ill-suited to capture the dimension of skin biting, making it clinically distinct from the other disorders. Also, there may have been too few individuals in the sample with severe skin biting to construct significant analyses from, indicating a difference in prevalence from the other disorders. Similarly, Teeth Grinding also varied significantly from the other disorders. Altogether, these results suggest that researchers interested in BFRBs and the correlates of BFRBs may benefit from specificity. Different kinds of BFRBs might have different associations with different self-related constructs and may also necessitate different approaches to intervention and treatment.

In addition, the fact that Organizational Perfectionism correlated significantly with TTM severity, but not with the other disorders, teaches researchers a valuable lesson on the

generalizability of TTM research when considering other BFRBs. For a long time, because TTM is the most studied and well-researched BFRB, with not only the best literature base but also the greatest prevalence rating within the population, TTM became the gold-standard for BFRB research, of which expectations and hypotheses are based for the other BFRBs. As more and more evidence accumulates that the individual disorders within the group are clinically distinct from one another, greater research is needed for each disorder, expanding beyond TTM. This need is clearly shown in the results of the perfectionism and BFRB severity measures, as the theory of Organizational Perfectionism, and therefore the Frustrated Action Model, was not supported for any BFRB other than TTM.

Finally, the results of the study support more research into the construct of narcissism and how it relates clinically to BFRBs. All BFRBs, with the exception of skin biting, correlated significantly with vulnerable narcissism. Teeth grinding not only correlated significantly with vulnerable narcissism, but also with grandiose narcissism. The reasons for this consistently significant association across BFRBs should be explored in further research.

Study limitations include the use of self-reports as well as the lack of diversity in the sample. The use of self-report measures limits the assessment of disorder severity, as clinicians are not determining the extent of symptoms. Also, answers on self-report measures may or may not be biased based on the participants' views of themselves, or their desire to present a particular way. The sample was also entirely composed of college students, and was largely white and female. Sampling from the general population rather than a college population in a metropolitan area may provide results with greater generalizability across ages, genders, and

race/ethnicities. Finally, future research should examine having two separate groups of participants, one clinical and one non-clinical.

To summarize, the current study better characterizes BFRBs overall by not only highlighting their differences from one another, but also their significant relationships to many variables, including perfectionism and narcissism. While there was insufficient evidence to support the theory of a relationship between specific contingencies of self-esteem and BFRB severity, these results indicate a larger need for clinicians to treat clients on an individualized basis, rather than as members of a disorder class. Moving forward, greater research attention should be paid to the similarities and differences between BFRBs, as well as the costs and benefits of considering them as a disorder group. In addition, follow-up studies should examine the role of self-esteem contingencies and BFRB severity in clinical populations exclusively as compared to non-clinical populations, to provide greater clarity to the role of self-esteem on symptom severity specifically at the clinical level.

REFERENCES

- Altenburger, E. M., Tung, E. S., & Keuthen, N. J. (2014). Body esteem in adolescent hair pullers. *Journal of Behavioral Addictions, 3*(2), 124-127.
- Crocker, J., & Knight, K. M. (2005). Contingencies of self-worth. *Current Directions in Psychological Science, 14*(4), 200-203.
- Crocker, J., Luhtanen, R. K., Cooper, M. L., & Bouvrette, A. (2003). Contingencies of self-worth in college students: theory and measurement. *Journal of Personality and Social Psychology, 85*(5), 894.
- Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual Differences, 30*(8), 1311-1327.
- Grant, J. E., Menard, W., & Phillips, K. A. (2006). Pathological skin picking in individuals with body dysmorphic disorder. *General Hospital Psychiatry, 28*(6), 487-493.
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41-54.
- Gross, J.J., & John, O.P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348-362.
- Hansen, D. J., Tishelman, A. C., Hawkins, R. P., & Doepke, K. J. (1990). Habits with potential as disorders: Prevalence, severity, and other characteristics among college students. *Behavior Modification, 14*, 66-80.
- Heatherton, T. F. & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology, 60*, 895-910.

- Hill, R. W., Huelsman, T. J., Furr, R. M., Kibler, J., Vicente, B. B., & Kennedy, C. (2004). A new measure of perfectionism: The Perfectionism Inventory. *Journal of Personality Assessment*, 82(1), 80-91.
- Joubert, C. E. (1993). Relationship of self-esteem, manifest anxiety, and obsessive-compulsiveness to personal habits. *Psychological Reports*, 73(2), 579-583.
- Keuthen, N. J., O'Sullivan, R. L., Ricciardi, J. N., Shera, D., Savage, C. R., Borgmann, A. S., ... & Baer, L. (1995). The Massachusetts General Hospital (MGH) hairpulling scale: 1. development and factor analyses. *Psychotherapy and Psychosomatics*, 64(3-4), 141-145.
- Nock, M. K., Wedig, M. M., Holmberg, E. B., & Hooley, J. M. (2008). The emotion reactivity scale: Development, evaluation, and relation to self-injurious thoughts and behaviors. *Behavior Therapy*, 39(2), 107-116.
- Roberts, S., O'Connor, K., Aardema, F., & Bélanger, C. (2015). The impact of emotions on body-Focused repetitive behaviors: Evidence from a non-treatment-seeking sample. *Journal of Behavior Therapy and Experimental Psychiatry*, 46, 189-197.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Schoenleber, M., Roche, M. J., Wetzell, E., Pincus, A. L., & Roberts, B. W. (2015). Development of a brief version of the Pathological Narcissism Inventory. *Psychological Assessment*, 27(4), 1520-1526.
- Snorrason, I., Olafsson, R. P., Flessner, C. A., Keuthen, N. J., Franklin, M. E., & Woods, D. W. (2012). The skin picking scale-revised: factor structure and psychometric properties. *Journal of Obsessive-Compulsive and Related Disorders*, 1(2), 133-137.
- Veale, D., Eshkevari, E., Kanakam, N., Ellison, N., Costa, A., & Werner, T. (2014). The Appearance Anxiety Inventory: Validation of a process measure in the treatment of body dysmorphic disorder. *Behavioural and Cognitive Psychotherapy*, 42(05), 605-616.

APPENDIX

Table 7. Descriptive Statistics for Study Variables

	Alpha	Mean	SD	N	Range
RSE Scale					
Rosenberg Self Esteem	.897	3.1190	.51901	295	1.50 – 4.00
SSE Scales					
Performance Self-Esteem	.841	3.7099	.71616	295	1.29 – 5.00
Social Self-Esteem	.868	3.4489	.85252	295	1.14 – 5.00
Appearance Self-Esteem	.860	3.3108	.82299	294	1.00 – 5.00
CSW Scales					
Family Support	.752	5.5308	.89949	295	2.20 – 7.00
Competition	.842	4.9266	1.05304	293	1.60 – 7.00
Appearance	.754	4.9275	.98645	295	1.20 – 7.00
God's Love	.959	5.2617	1.71178	295	1.00 – 7.00
Academic Competence	.810	5.6542	.87414	295	3.20 – 7.00
Virtue	.819	5.2142	1.01079	295	1.80 – 7.00
Approval from Others	.808	4.1234	1.20168	295	1.00 – 6.80
PID5 Short Scales					
Disinhibition	.804	1.7197	.64871	291	1.00 – 3.60
Detachment	.741	1.6171	.59285	292	1.00 – 3.80
Psychoticism	.785	1.8981	.69737	293	1.00 – 3.80
Negative Affect	.739	2.4105	.71006	288	1.00 – 4.00
Antagonism	.689	1.5202	.48005	289	1.00 – 3.20
BFRB Severity Scales					
Hairpulling	.887	1.2639	.53310	294	1.00 – 3.43
Skin Picking	.921	1.3356	.54729	295	1.00 – 3.86
Cheek Biting	.944	1.4557	.71910	295	1.00 – 4.43
Skin Biting	.943	1.1259	.42326	295	1.00 – 4.14
Nail Biting	.962	1.6523	.90766	295	1.00 – 4.86
Teeth Grinding	.944	1.1985	.51090	294	1.00 – 3.86
Other	.969	1.7961	1.09053	289	1.00 – 4.71
AAI Scale					
Appearance Anxiety	.912	2.0799	.80641	294	1.00 – 4.70
TPI Scales					
Concern Over Mistakes	.882	2.9103	.88915	294	1.00 – 5.00
High Standards for Others	.860	2.9349	.85195	294	1.00 – 4.86
Need for Approval	.877	3.2223	.86983	294	1.00 – 5.00
Organization	.888	3.5128	.79742	293	1.25 – 5.00
Perceived Parental Pressure	.892	3.4020	.91181	292	1.00 – 5.00

Table 7. (Continued)

	Alpha	Mean	SD	N	Range
Planfulness	.879	3.6442	.77292	293	1.29 – 5.00
Rumination	.876	3.3239	.87423	293	1.00 – 5.00
Striving for Excellence	.858	3.5315	.81299	292	1.00 – 5.00
Conscientious Perfectionism	.917	3.4049	.59459	291	1.39 – 4.96
Self-Evaluative Perfectionism	.946	3.2109	.72942	291	1.16 – 4.81
DERS Scales					
NONACCEPT	.907	2.3260	1.00035	292	1.00 – 5.00
GOALS	.870	3.0256	1.00553	292	1.00 – 5.00
IMPULSE	.858	2.0204	.84654	291	1.00 – 5.00
AWARENESS	.845	2.5334	.84101	292	1.00 – 5.00
STRATEGIES	.904	2.2154	.93628	292	1.00 – 4.88
CLARITY	.813	2.3993	.80773	294	1.00 – 4.60
ERQ Scales					
Cognitive Reappraisal	.867	4.7959	1.16586	292	1.00 – 7.00
Expressive Suppression	.738	3.4238	1.29560	291	1.00 – 6.75
ERS Scales					
Sensitivity	.926	1.3631	.96605	285	0.00 – 4.00
Arousal/Intensity	.877	1.5731	.93450	290	0.00 – 4.00
Persistence	.829	1.5896	1.06655	290	0.00 – 4.00
B-PNI Scales					
Grandiosity					
Exploitativeness	.780	1.8305	1.08723	293	0.00 – 5.00
Self-Sacrificing Self Enhancement	.762	2.5944	1.13930	293	0.00 – 5.00
Grandiose Fantasy	.815	2.3929	1.25227	292	0.00 – 5.00
Vulnerability					
Contingent Self Esteem	.862	1.6488	1.23263	293	0.00 – 5.00
Hiding the Self	.779	1.9805	1.24927	292	0.00 – 5.00
Devaluing	.862	1.0660	1.10482	293	0.00 – 5.00
Entitlement Rage	.773	1.3805	1.07337	293	0.00 – 5.00

Table 8. Correlations between Difficulties in Emotion Regulation and BFRB Severity.

	Hair Pulling	Skin Picking	Cheek Biting	Skin Biting	Nail Biting	Teeth Grinding	Other
Difficulties in Emotion Regulation	.239**	.208**	.255**	.073	.205**	.185**	.234**

Nonacceptance of Emotional Responses	.238**	.222**	.259**	.114	.166**	.224**	.232**
Difficulty Engaging in Goal-Directed Behavior	.128*	.178**	.150**	.051	.092	.170**	.177**
Impulse Control Difficulties	.207**	.205**	.192**	.061	.193**	.158**	.206**
Lack of Emotional Awareness	.081	-.044	.023	.026	.033	-.086	-.044
Limited Access to Emotion Regulation Strategies	.159**	.187**	.259**	.008	.205**	.164**	.230**
Lack of Emotional Clarity	.210**	.099	.150**	.068	.156**	.127*	.146*
Emotion Regulation Questionnaire	-.040	.007	-.080	-.075	.010	.112	-.008
Cognitive Reappraisal	-.133*	.013	-.089	-.097	-.043	.035	-.039
Expressive Suppression	.114	-.005	-.013	.007	.069	.139*	.038

Note: ** $p < .01$, * $p < .05$

Table 9. Correlations between Emotional Reactivity and BFRB Severity.

	Hair Pulling	Skin Picking	Cheek Biting	Skin Biting	Nail Biting	Teeth Grinding	Other
Emotional Reactivity	.207**	.250**	.278**	.070	.176**	.141*	.257**
Sensitivity	.227**	.260**	.275**	.076	.182**	.138*	.262**
Arousal/Intensity	.184**	.226**	.261**	.065	.176**	.162**	.253**
Persistence	.174**	.216**	.256**	.059	.132*	.095	.204**

Note: ** $p < .01$, * $p < .05$